

Axial piston swash plate compressor for vehicle air conditioning - uses rotary valve with groove to convey residual gas between cylinders

Patent Assignee: TOYODA JIDOSHOKKI SEISAKUSHO; TOYODA JIDOSHOKKI SEISAKUSHO KK
Inventors: HIDAKA S; KAWAMURA C; KAYUKAWA H; KIMURA K; MIZUTANI H; TAKEICHI T

Patent Family

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US 5626463	A	19970506	US 93131452	A	19931004	199724	
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KR 9701135	B1	19970129	KR 9319280	A	19930922	199933	
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Patent Details

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Abstract:

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The swash plate compressor has a valve assembly (76, 78, 90) with the aid of which residual gas can be conveyed from one cylinder bore (20A to 20F) to another cylinder bore in which a compression stroke takes place.

The valve arrangement comprises a rotary valve (76) secured to the drive shaft (42). A groove (90) produces connections between selected cylinder bores (2A to 2F) during the rotation of the valve, via which the residual gas can be led from one cylinder to another.

ADVANTAGE - Allows the suction volume attainable in practice to be raised close to the theoretical suction volume.

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US 5626463 A

An axial multi-piston compressor comprising:

a drive shaft;

a cylinder block having cylinder bores formed therein and surrounding said the drive shaft;

a plurality of pistons slidably received in the respective cylinder bores;

a conversion means for converting a rotational movement of said drive shaft into a reciprocation of each piston in the corresponding cylinder bore such that a suction stroke and a discharge stroke are alternatively executed therein, a fluid being introduced into said cylinder bore during the suction stroke, and during the compression stroke, the introduced fluid being compressed and discharged from said cylinder bore such that a residual part of the compressed fluid remains in said cylinder bore when the compression stroke is finished; and

a valve means for allowing the introduction of fluid into each of said cylinder bores during the suction stroke thereof; and

an escaping means associated with said valve means for allowing the residual part of the compressed fluid to escape from a cylinder bore, in which the compression stroke is just finished, into a cylinder bore in which an associated piston in a compression stroke has passed bottom dead center by a predetermined distance.

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